

# 1. Early types

This section includes very few of the earliest tubes, from the Great War up to approximately the late twenties, to show the evolution of bulbs and electrode shapes and even the evolution of performances in the years. We can observe how many of the most interesting tubes appeared later derive from studies on very early prototypes. Magnetrons are all derived from the diode described by Albert W. Hull in 1921. We even learn that Robert Goddard, the same known for his works on rockets, patented an external control-electrode structure even before the De Forest triode, originating a vacuum tube oscillator, the C300A, made by Amprex for Collins in the late thirties.

Some of the early tubes are of the ‘soft’ type, with small amount of gas inside. This, because the poor vacuum techniques used by some glass blowers, resulted in increased radio wave sensitivity, when the tube was biased very close to ionization.

No attempt was made to add rare types. These tubes are just shown as reference, to better illustrate the evolution in the following years. Often electrodes were loosely supported by glass arbors. Enough spacing was left to allow vibration and bendings of the plate, when hot, through the tube life.

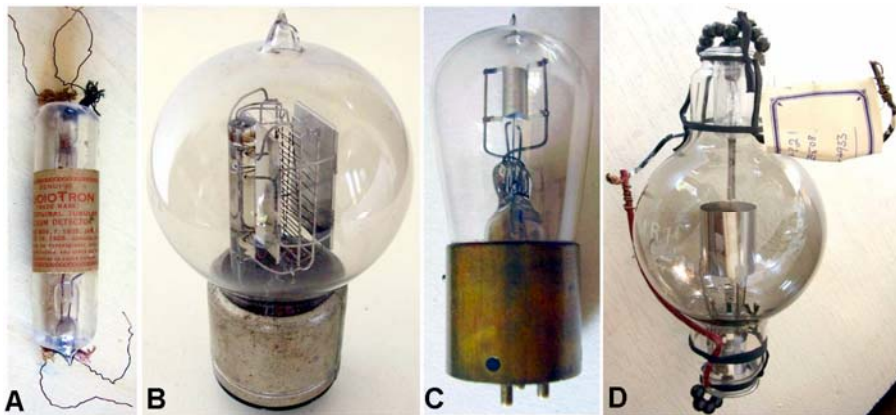


Fig. 1.1 – Early tubes in production during the Great War, 1915-1918. From left, an Audiotron, general purpose detector or amplifier, a VT-2 military transmitting triode, a GE TB1 Kenotron, probably the first ruggedized tube for airborne operation, and a MR1 high-power rectifier, in use by British Royal Navy.

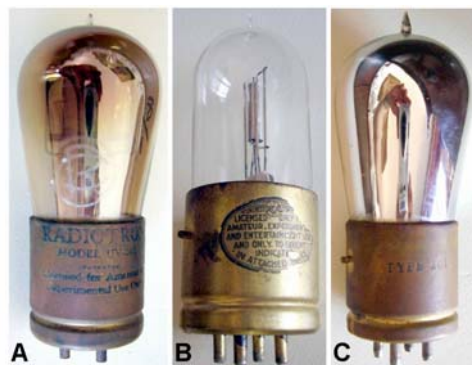


Fig. 1.2 – Tipped bulbs were in use in the first half of the 1920s.